MARCH 1956

FIREMEN

SIXTIETH YEAR · NATIONAL FIRE PROTECTION ASSOCIATION

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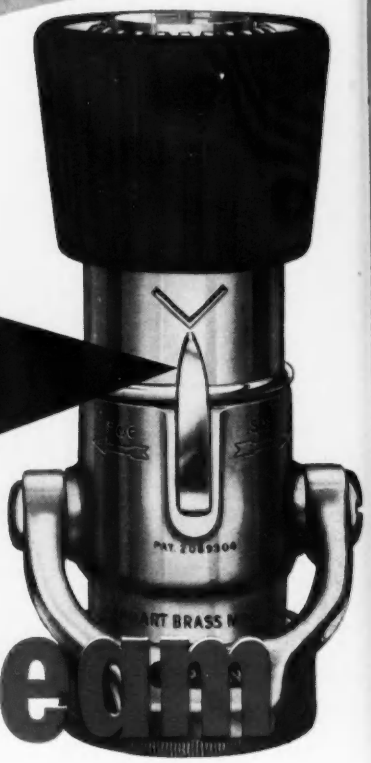

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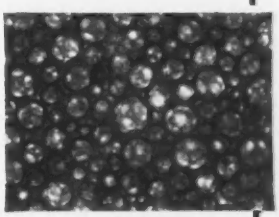

Photomicrograph X30, showing closely-knit bubble blanket of Nicerol foam, strongly cohesive, adhesive, outlasting the fire.

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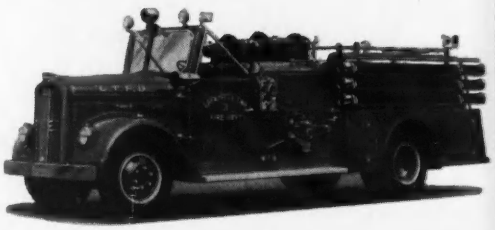

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Firemen

Volume 23 — Number 3

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Call the Fire Department!

Of all the pleas uttered by fire fighters during their experiences in educating the public, perhaps the most frequently used phrase is "If you have a fire, for heaven's sake call the fire department!" These words have been stated and restated for so many years that one could assume that any owner or proprietor of a building which caters to public use would automatically summon fire department assistance if his property and the lives of his guests were threatened by fire.

Such an assumption would be naive. As reported in the January issue of the NFPA *Quarterly*, the management of a well-known hotel in New York City has not followed this fundamental good practice, even though several fires have occurred in the hotel in recent months.

And in Brooklyn, Maryland, someone apparently thought that it was not necessary to call the fire department promptly when a small fire occurred in the roof of an amusement hall. This oversight was one of the contributing factors in the fire which claimed 11 lives. For details see page 8.

A Letter to NFPA

Dear Sirs:

My 8-year-old has muscular dystrophy and among his many, many books his favorite is "Sparky." Recently he found where one can order a "Sparky" badge, manual and membership card for "Sparky's" Fire Department.

The firemen in our town have been so very kind to Alan and have really instilled a love for all firemen in his heart.

I am enclosing the necessary amount of stamps and would greatly appreciate your sending him these things.

Thank you very kindly,

MRS. KEITH GRINNELL,
916 Kittitas Street,
Wenatchee, Washington.

"Sparky" has welcomed Alan Grinnell as a new member but any readers of FIREMEN *who would like to extend greetings to him can write to the above address—Ed.*

Fire School Calendar

From now until December some 100,000 fire fighters throughout the United States and Canada will be taking part in State and Provincial training schools conducted especially for paid, call or volunteer fire fighters, as well as for members of industrial fire brigades. Each year the well-organized programs become more intensive as better training sites and training aids are made available to competent instructors. A preliminary "calendar" for such firemen's training appears on pages 20 and 21 of this issue. By writing to the training directors mentioned for each State, you can obtain preliminary programs of the courses scheduled this year.

Cover Photo

The picture of the "Sparky" poster on this month's cover appeared in the Allentown, Pennsylvania, "Morning Call" on January 24, 1956. The caption under the picture read:

"It Found One — Fire in an overheated furnace ignited a paint-can rack in the basement of a three-story apartment dwelling at the southeast corner of 12th and Tilghman Sts., Allentown, last night. Allentown Fire Chief John Butz said the flames jumped to a nearby partition and mushroomed over to the joists. Although 10 persons, living in the apartments, had to flee because of dense smoke, the flames were confined to the basement area. Dave Moses, 707 N. 12th St., who operates Dave's West End Market, and Irwin Miller, who conducts a luncheonette in the same building, reported extensive damage to perishables due to intense heat."

TEN DIE IN MARYLAND FIRE

ON SUNDAY evening, January 29, fire in this Arundel Park, Maryland, amusement hall resulted in the deaths of ten women and burns and injury to hundreds of other persons. A man also died a week later because of burns received. An estimated 1,100 persons were in the 80- by 160-ft. hall of the building when the fire started. Factors which contributed to loss of life were: failure to evacuate the building immediately when fire was discovered, failure to call the fire department promptly, congested conditions in the hall aggravated by loose chairs and tables, and lack of emergency lighting.

(*A complete report on this fire tragedy is being pre-printed from the April, 1956, NFPA Quarterly, and may be obtained from the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts. — Ed.*)

Fire companies which responded to the delayed alarm had to cope with difficult problems of rescue, fire attack and movement of apparatus. Hundreds of people who had escaped from the building were milling around the area, dazed by injury, panic or confusion. The Brooklyn, Md., Fire Department, headed by Chief Joe Neill, was the first to arrive, although apparatus from the Linthicum, Ferndale and Glen Burnie Fire Departments, also responded on this alarm as part of the mutual aid assignment for that section of Anne Arundel County. A general alarm was sounded immediately after first apparatus arrived, and eventually about 30 pieces of apparatus, including rescue squads from six other communities, reported to the fireground. A serious traffic problem existed which greatly hindered movement of apparatus and ambulances.

Initial rescue and fire fighting operations were under the direction of Chief Neill, who ordered a pumper to hook to a private hydrant (about 300 ft. distant), and other pumpers to take suction from pits of water in construction work across the street from the involved building. Water was relayed from these sources of supply to pumpers near the building. Attack initially was with 2½-in. lines which later were wyed to 1½-in. lines. An erroneous report that people were still trapped in the fully involved building heightened the tension of the fire fighters' jobs.

The building, known as Arundel Park, was a 1-story concrete block structure with an arch type roof of wood sheathing on wood trusses. The amusement hall had a combustible fibreboard ceiling, above which an undivided, concealed attic space existed for the length of the structure. The entire building housed a milk bar, cocktail lounge, and the large hall which was rented frequently to organizations for "bingo" parties, oyster roasts and similar events. On this particular evening, some 1,050 ticket holders and 50 church workers were enjoying an oyster roast conducted by St. Rose of Lima Catholic Church. To accommodate this crowd, a number of wooden tables and steel folding chairs had been placed in the center of the hall. Other tables were distributed around the edges of the hall for the sale of refreshments, for "money wheels," and for distribution of prizes. In addition, there were several slot machines, a space for dancing and a small bandstand.

The fire apparently was observed about 5:00 p.m. by several men outside the building, where oysters were being cooked in a fireplace. It was reported that flames first appeared under the eaves of the roof near the fireplace chimney, and that some men used a garden hose in attempting to extinguish the flames. Even though close attack was made

(*Continued on page 26*)

THOROUGHNESS

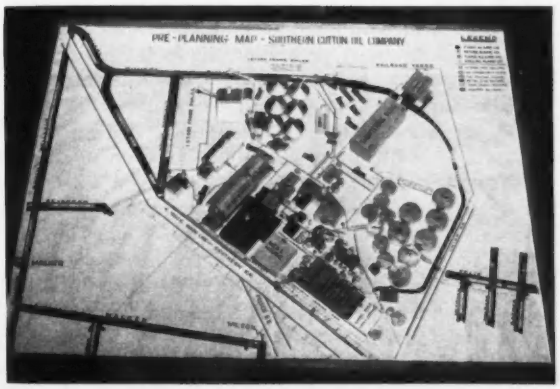
the essence of pre-fire planning

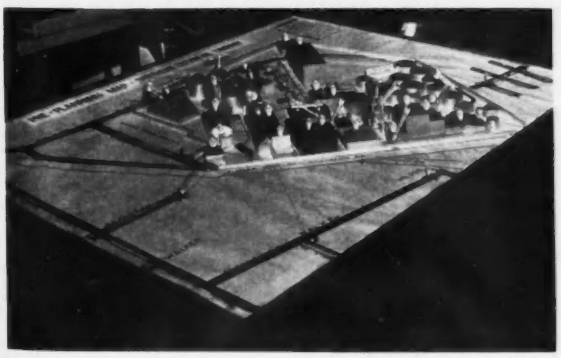
Part III of a series describing the pre-fire planning program of the Memphis, Tennessee, Fire Department, headed by Chief John C. Klinck. The first article appeared in the January, 1956, issue of FIREMEN magazine.

AS REPORTED in previous issues of FIREMEN, two important characteristics of the Memphis pre-fire planning program are the detailed descriptions and mapping of industrial plant areas. Illustrations on this page show how fire department members report specific features of the Southern Cotton Oil Company in Memphis.

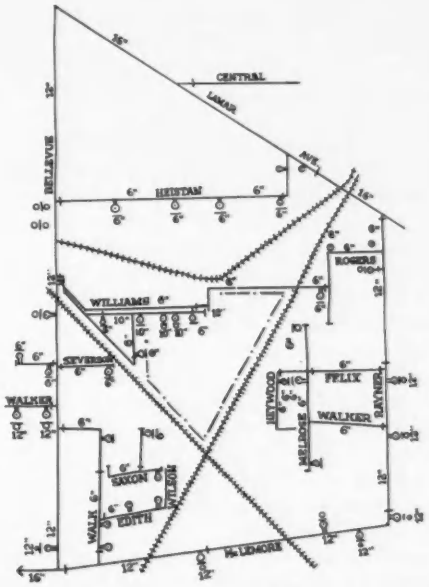
When such a major industrial "target" site is selected for pre-fire planning, a special committee consisting of a deputy chief and four district chiefs prepares a general plan for response and positioning of apparatus and man-power. Such plans are subject to the approval of Chief Klinck and to correction when practice layouts and water-flow tests are made on the industrial property.

Once an operational plan has been established for a key industrial property, detailed maps and scale models of the installation are prepared by members of the fire department. The scale models have been particularly useful to Chief Klinck and other fire officers who confer with plant management personnel when fire protection facilities must be corrected or increased. For example, one of the recommendations made to the Southern Cotton Oil Company was for the installation of two 8-inch supply lines with fire department connections. Scale models make it easy for fire officers to point out just where and how such installations should be made on industrial property.





Scale models of the Southern Cotton Oil Company which were built by members of the Memphis Fire Department.



Typical water main map, usually prepared in different colors.

In addition, detailed attention is given to the water supply system for the "target" property. ~~Shown above is one of the sketches drawn for an industrial property in Memphis.~~ Members of the department continually prepare or revise a water main map book which shows the distribution system for the entire city. Maps ~~similar to the one shown above~~ are reproduced in various colors, each color signifying a different size of water main. Fire hydrants and cut-off valves are also indicated. Such sketches are retained in fire headquarters and in the "control car" together with the records of the water-flow tests conducted at the various industrial sites. Particular attention is given to locating the best sites for heavy duty pumping apparatus and for the application of heavy stream appliances.

COMMAND DECISIONS!

By Warren Y. Kimball, Manager, NFPA Fire Services Department and Editor of FIREMEN.

(*Part I of two parts.*)

AT ALL too many fires no real or effective operational or tactical command is exercised. Operations tend merely to follow a routine which has become acceptable through the authority of tradition. Thus the exercise of judgment, or recognition of the fact that there may be better ways of doing a job, may be avoided or discouraged.

Officers having authority to command may deceive themselves into thinking that they are exercising judgment based upon experience, while many important matters go unsupervised due to lack of training in, and study of, command functions. In some departments even the placing of companies on the fireground has evolved into a set formula which deprives the battalion or district chief of latitude in making command decisions.

It has been remarked by some observers that the average American fire department is so small that comparatively few officers have had the experience of commanding a dozen or more companies. Thus it is reasoned that in the event of an atomic attack and fire there would be a shortage of chiefs experienced in handling major operations.

However, whether a fire is fought by a single large department, or by the combined efforts of several smaller ones, the same command responsibilities must be met.

General fireground command procedures should utilize some formula which will guarantee that all jobs essential to the control of the fire and reduction of property loss are carried out. Such a formula should be useful whether the fire is one handled by a few companies or is a large multiple alarm job. Certain basic fundamentals apply to any type of fire. If good command procedures are followed as a matter of routine, the foundation will have been laid for good performance during a major emergency. In other words, each working fire should be considered as an exercise in command procedures that will be followed when a big blaze comes along. If the tactical plans do not work on the smaller fires they most certainly will not work on the big ones.

One of the basic fundamentals of command is that no chief should try to do everything himself. If he does, sooner or later something important will be overlooked and "he will fall flat on his face." This means that definite command responsibilities must be delegated to responsible officers who will act with the authority of the chief of department but who are expected to exercise their best judgment in the area to which they are assigned.

The general command procedures should be worked out and understood in conference before a fire occurs. Obviously, a fundamental requirement for good fireground command organization is a good relationship between the various top officers themselves. They in turn need the confidence of their subordinates. Officers who do not understand and respect each other in quarters seldom are distinguished by teamwork on the fireground. Loyalty is needed in both directions in any chain of command.

On the fireground a simple way to divide command responsibility into workable units is to assign specific areas of operation or "positions" to the various chief officers. In many fires the rear of the fire is one of the toughest points of operation due to restricted area of maneuver as well as the life and exposure hazards. Therefore, it has long been considered good operational procedure to direct the chief who is second in command to "take charge of the rear." If a fire involves a large area, other top chiefs, (possibly including chiefs responding on mutual aid calls if a department only has two or three chief officers), can be assigned to specific points. Usually, the district or battalion chief, in whose district the fire occurs, is in command of companies working inside of the fire building. This is because of his familiarity with the building and with the companies operating in the area, as well as the fact that his rank is in the nature of intermediate supervision between top command and the operating companies.

It is not unusual with today's mobile fire apparatus to have a dozen or more companies, paid or volunteer, mobilized for a working fire. This makes it extremely difficult, where companies arrive in quick succession, for one chief to assign them to positions where they are needed most and will do the most good. All too often the point where the chief happens to be standing is likely to demand his full attention, and events at the rear and at other important points may be overlooked.

THE command job is brought to manageable size by assigning chief officers to various positions and then directing company officers to report to these subordinate chiefs for specific directions in their area of operation. Thus, effective control can be exercised from the top command through the other chiefs who have been informed as to the type of attack desired. It will be their job to see that the plan is carried out in detail and to notify the fireground commander of any change in conditions that may seriously affect the operations. True, the various chiefs will want to leave their assigned positions to confer, but when they do so they will delegate their area authority to a qualified company officer or at least let their aides know where they can be located.

Where chief officers are not given specific command assignments at a fire they usually will tend to wander

about the fireground trying to see what needs to be done. This inevitably results in several chiefs giving conflicting and confusing orders to the same fire company personnel, who resent what they consider excessive and haphazard supervision. This condition is corrected and morale is improved if department members feel that they are responsible to one superior with orders coming directly through a responsible chain of command. After all it was stated nearly 2,000 years ago, "No man can serve two masters."

Let us see how command procedures work out at a typical multiple alarm fire handled by a city fire department. Readers can interpret the situation to fit their own local organization and conditions. The first company to arrive radios a report of a "working fire." This company goes to work trying to advance lines inside, usually at the front of the building, and is assisted by members of the first truck company. The district chief arrives and observes conditions indicating a possible extension of the fire. He gets a company to the rear accompanied by truck company men if available. It should always be remembered that fire fighting efficiency is greatly advanced by having engine and ladder companies work together as teams.

If the district or battalion chief sees that the fire may extend he orders additional asistance promptly, by striking a second or greater alarm. In a small community this alarm may bring in outside or mutual aid. In a city, the division or platoon chief will usually respond to the "working fire" report, if not automatically assigned to the first alarm response.

He will receive a report from the district or battalion chief as to conditions found and action taken, and will assume command pending the arrival of superior officers on the multiple alarm. He will assign the district chief to the point or area he wishes to have him cover and tell him what companies he will have to work with plus any other pertinent command data needed to have his plan carried out. If the fire appears to be extending to a large area he may have the district chief take temporary command in the rear or may place him in charge inside of the structure while he assigns the second alarm companies as they arrive. Usually, the deputy or his aide will try to find time for a quick general sizeup of conditions so as to make sure that enough help is on the way. He must see that there is enough help at hand early in the fire to effect rescues and also to confine the fire. He knows that one of the best means of saving life is to provide plenty of good streams at points where fire might extend to cut off egress. The division chief may find it necessary to radio instructions to some of the companies en route, to come into the fire by various routes so as to provide coverage of the entire fire area as quickly as possible. In this work his driver or aide, who is familiar with the command procedures, is all important because critical time will be lost if the chief has to attempt to plan the operation, intercept companies as they arrive and also to maintain communications. Generally, where drivers are provided for the district chief, his car will be the communications car until a command car arrives on the multiple alarm.

When the chief of department and other headquarters chiefs arrive at a multiple alarm fire, the field command for control and extinguishment of the fire is established. The deputy quickly reports the situation and the action taken. The chief of department then deploys his chief assistants in accordance with the immediate needs. Each is given a definite area of command or a specific job to do. He is also assigned companies and equipment needed to do the job. The chief of department avoids, as a general rule, the giving of detailed orders to individual companies except in a very small department. As companies arrive they are assigned to "Assistant Chief Jones in the rear" or directed, "report to Deputy Chief O'Brien in the alleyway", etc.

When responsibility for various positions has been assigned, any failure to control at a given point will not be the fault of the chief in command but of the chief in the assigned area. Each area chief is expected to control the fire at his assigned position, keeping the commanding officer informed as to conditions and requesting any help needed. In this way the command ability of the various chief officers is developed as they move up through the top ranks and finally assume top command at major fires. Where there are command deficiencies at any given point these will become apparent and can be corrected in staff conferences.

IN OUR hypothetical fire let us assume that the assistant chief at the rear requests two more engine companies and an additional ladder company to protect serious exposures. The deputy chief at another point needs a fresh company because extreme heat and heavy smoke is reducing the effectiveness of some of the first alarm units. The chief of department at once knows that another alarm or call for aid is needed, if the extra help is not already on the way or standing by. A truism often heard on the fireground is: "You can send them back if you don't need them but it may be too late to stop a fire if sufficient help is not called in time." After all, radio equipped companies are still in touch with the dispatcher while standing by for possible duty at a major fire. Some chiefs figure that if all of the companies on the fireground are committed to action it is very good practice to get some additional help to the fireground as a "tactical reserve" or at least to make sure that they are moved up to nearby stations.

One veteran chief of a large department reports that it has been his policy after the fire is stabilized to call in fresh companies to relieve the men who have made the initial attack. In this way all units gain experience at major fires and no crew is worked to exhaustion with the increased danger of injury, heart attacks or prolonged sick leave. (After all, with the advent of motor apparatus, there is no reason why the first alarm crews, who are worn out, need to be the last to leave the fireground possibly hours later.) His practice is to call outlying companies not assigned to the multiple alarm for relief purposes. Let us assume that Engine 2 has had a tough battle and the men are tired, wet and cold. Engine 12 is called. They use a hose clamp and place their own nozzle on Engine 2's line. Engine 2 then takes Engine 12's apparatus to quarters where they freshen up while serving as a covering company. When the line is no longer needed the fresh men roll up the hose and return it to the quarters of the company they relieved and pick up their own apparatus. In this way all companies are working companies with improved departmental efficiency.

That Wonderful Family of "Geests"!

On January 26 at the Hotel McAlpin in New York City, tribute was paid to NFPA member Harry E. Newell by the Committees on Gases and Flammable Liquids, with which he has long been associated. One of the most entertaining speeches of the affair was given by Franklin R. Featherston, Secretary of the Compressed Gas Association and Vice President of the Liquefied Petroleum Gas Association. His unusual summation of the history and characteristics of gases, is digested on these pages.

THERE is a vast disparity in the physical and chemical characteristics of the members of the gas family, and we have an infinitely more difficult and subtle proposition to handle, than our brothers who deal with matter in its liquid or solid states. In spite of that, the gas "family" is a rather friendly lot. If free to mingle, gases will mix thoroughly and intimately and will stay mixed forever, irrespective of differences in their weights.

For instance, illuminating gas, (composed in large measure of carbon dioxide, which is a heavy industrial gas), and hydrogen, the lightest of all substances, will stay mixed indefinitely, although there is more difference between the weight of hydrogen and carbon dioxide than there is between the weight of water and mercury.

I was told yesterday that the compressed gas industry is a two-billion dollar business annually. That does not include what is generally referred to as natural or manufactured gases. Nevertheless, it represents a lot of business and it must be important to our national economy.

The early chemists assumed that the active material which could be driven from another substance by heat was the *ghost* or the *spirit* of that substance. To some extent our nomenclature today retains some of that early thinking. For instance, we speak of spirits of turpentine; alcohol is known as the spirits of wine; ammonia is known as the spirits of hartshorne from which it was first distilled. And there are spirits of nitre, sprits of camphor, and so on.

A Dutch scientist named Van Helmont, who died in 1644, derived the word "gas" from the Dutch word "geest" meaning ghost, or spirit. Many of the gases of commerce are veritable ghosts as they can neither be seen, heard, nor felt. And many of them are not detectable by taste or odor. On the other hand, some of these ghosts give a very good account of their presence, arousing every one of the human sensitivities. In spite of this, gases vary in physical and chemical characteristics over a far wider range than do either liquids or solids. For instance:

The difference between the weights of chlorine and of hydrogen is 2½ times more than the difference between the weights of mercury and water; or 1½ times the difference between the weights of lead and pine wood.

Argon is an inert, passive substance. *Fluorine* is one of the most active and energetic gases in nature. *Oxygen* is the supporter of animal life from which it produces carbon dioxide. Vegetable life produces oxygen and is supported by carbon dioxide. *Fire* — that ever-potent ogre that "Sparky" says never to let get started — is only a rapid chemical reaction between oxygen and a combustible substance.

Oxygen is the most abundant substance in the universe while *Xenon*, one of the rarest of gases, occurs in our atmosphere to the extent of only one part in 10 million. At room temperature, *hydrogen* and the atmospheric gases are practically insoluble in water. *Ammonia*, on the other hand, is absorbed to the extent of 1,000 times the volume of the water.

Carbon dioxide is inert and finds great use as a fire extinguishing medium. *Nitrogen* will not burn. *Hydrogen* burns with a colorless flame — while *acetylene* burns with the brightest flame of all. *Chlorine* may be liquefied and solidified at very low pressures and at normal temperatures, while *hydrogen* and *helium* can be liquefied only under the most extreme conditions of pressure and refrigeration.

The medical profession uses certain of these gases in the treatment of their patients: oxygen to sustain life, other gases as anesthetics to alleviate pain, and still others to substitute for life-giving air in order to get oxygen into the lungs.

In fuel value, *nitrogen* has 2,760 British thermal units less than none at all, as that number of heat units are needed to force one pound of nitrogen to combine with its least quota of oxygen. And *hydrogen* has the highest fuel value, pound for pound, of any substance in nature, namely, 52,000 Btu per pound when combined with its least quota of oxygen.

Hydrogen and *helium* are the lightest of all substances, yet some of their properties are as far apart as the poles. And *hydrogen* is so light that it is the only substance that escapes from the earth's atmosphere in defiance of gravity and is lost to our universe as it passes into interstellar space.

The NFPA Committee on Gases has been fortunate that its concern about gases has been confined to those which present some degree of fire hazard. Uses for gases have multiplied progressively over the years, to such an extent that many of the problems of 10 years or more ago do not exist today; but new and different problems are always with us. It does not seem so long ago that the Committee on Gases was concerned with standards for gasoline gas machines. Then came liquefied petroleum gases, a more potent and lusty child. It gave the poor gas machine business a real back seat, and the Committee on Gases a real headache.

The activity of the Gases Committee over the past 20 years has been devoted predominantly to problems related to LP-Gas. I do not mean to imply that LP-Gas was the only problem — but I do believe that the development of the LP-Gas standards, and their promotion to the status of state law in 44 of our 48

states, is an accomplishment worthy of notice. And here some recognition must be made of the constant assistance of the LP-Gas industry, and the sterling contributions that the LP-Gas Association has made in "selling" these standards throughout this country, in Canada, and in numerous other jurisdictions.

To the American Gas Association must go equal recognition for its contributions to the development and to the promotion of the standards for LP-Gas at utility plants.

Through this era, Harry Newell was not only the Chairman of the Committee, but he was its spearhead. No other man contributed as much of his energy or gave as much of his time to this work. The ever-changing kaleidoscopic nature of that industry imposed great demands upon the Committee, but more especially upon its Chairman.

The trend in the compressed gas industries over the past 10 or 15 years has been to new and different types of packaging; new and different types of transportation and storage; also to the movement and storage of gases in larger and larger volumes.

As a result of such developments in the oxygen industry, the Committee now has before it a proposed standard for the installation of bulk oxygen systems on consumer premises.

At the moment the Committee on Gases is not involved in the development of ammonia standards; but such standards are currently being processed through the American Standards Association. I refer to them here only to illustrate the changes now occurring in the industries. Formerly the safety code for mechanical refrigeration was adequate for safeguarding ammonia installations. Then came a big, new use for this gas in agriculture. The increase in demand was tremendous and many new problems came to the foreground.

Of the hazards associated with anhydrous ammonia, the fire hazard, if any, is low on the list. For that reason the industry did not bring its problem to this forum. But there is an area of interest and concern that may eventually find its way into the NFPA Committee on Gases.

Refrigerated gas storage is not exactly new but it is getting more and more attention. The oxygen industry has been using it for a long time. Carbon dioxide and nitrous oxide are transported as refrigerated liquids under controlled pressure conditions. There is at least one refrigerated anhydrous ammonia storage plant that has a single storage vessel with a capacity exceeding 1,000,000 gallons.

An experimental plant is proposed for installation at a utility in Georgia where propane will be stored under refrigerated conditions at low pressure.

The NFPA Committee on Gases, like the family of gases that it represents, finds an area of compatibility through the catalytic personality of its Chairman, Harry Newell, even though, (like the gases), the characteristics of the members, individually, vary from pole to pole, embracing weight and lightness; activity and inertness; density; flammability; but I shall not go so far as to suggest varying degrees of odor.

To Harry Newell we can attribute the success and the importance of the Committee on Gases of the NFPA, and we look forward to his continued leadership in his new capacity as permanent Honorary Chairman of the Committee on Gases, an honor conferred upon him by the NFPA Board of Directors.

Fraternal Order of Firemen?

JOSEPH L. GONZALES, 619 Gene Avenue, N.W., Albuquerque, New Mexico, reports that members of the Albuquerque Fire Department have organized a "Fraternal Order of Firemen" and are incorporated under a state charter. It is a non-profit organization for charitable purposes and is intended to create a closer feeling of friendship and good will among members and to encourage higher understanding of the fire fighting profession. It is not affiliated with any labor, religious or political organization. As Secretary of Lodge No. 1, Mr. Gonzales wishes to hear from fire fighters in other states who may have developed similar organizations, since members of his lodge would like to expand activities to a national scale. Readers interested can write to the Lodge at the above address.

The dinner honoring Harry E. Newell signalized his appointment as Honorary Chairman of the NFPA Committees on Flammable Liquids and Gases. At the head table (left to right) are: NFPA Vice President Henry G. Thomas, Mrs. Charles H. Bunn, Jr., Mr. Bunn, Mrs. Harry E. Newell, Mr. Newell, NFPA President T. Seddon Duke, Franklin R. Fetherston, Mrs. John A. Neale, NFPA Vice President Neale, Mrs. Robert S. Moulton, and NFPA Technical Secretary Robert S. Moulton.

What to do about HYDRANTS

Some suggestions on inspection and maintenance by NFPA Chief Engineer Horatio Bond

Installation

THE work of installing hydrants is done by crews of the water department or water utility. It is usually the responsibility of the fire department, however, to make sure, by periodic inspection and operation, that the hydrants are working properly.

Freedom from trouble with hydrants after installation depends upon attention to a number of details, which can be readily taken care of when the original installation is made, but which are expensive to fix later. Improperly installed hydrants can give both the water department and the fire department a great deal of trouble.

In many cases, it would not be out of order for a fire department company officer to see that hydrants assigned to his company for supervision are properly set, wherever this can be arranged. The water department should, of course, consult with the fire department about the general location of hydrants. When the hydrant comes to be actually installed, its final setting a few feet one way or another may be a matter which could substantially add to, or detract from, convenience in use of the hydrant by fire companies. If the company officer is present, he can see that the hydrant is set with the outlets at the proper height above final grade, and he can see that the location is not one in which obstructions are likely to develop later, thus hindering fire fighting operations.

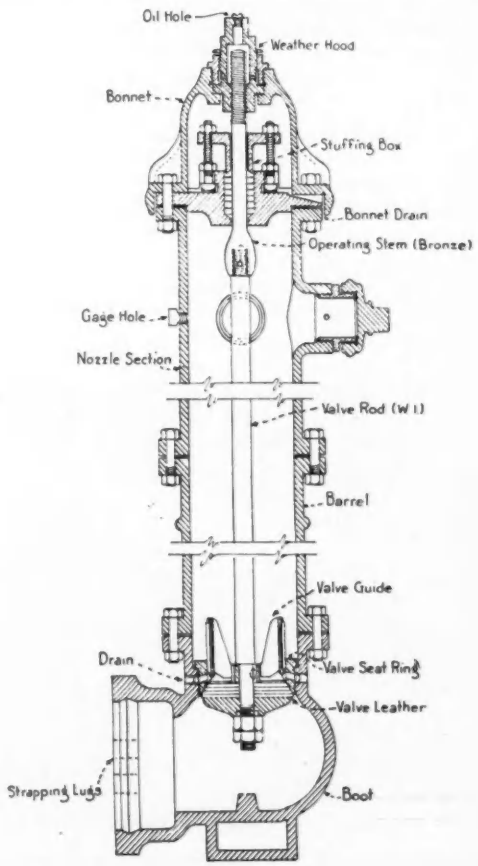
A very common cause of hydrant trouble is due to failure of the hydrant barrel to drain. In frost-proof hydrants, which are the most common type, there is a small drain in the base of the barrel. The usual valve is a ball which rolls against a seat when there is water under pressure in the barrel. When there is no water under pressure in the barrel, the ball rolls away from the seat, leaving an opening through which water can drain from the hydrant. It should be noted that ground water above the level of this valve seat can flow into the hydrant barrel. Proper drainage from the base of the hydrant is essential in avoiding difficulties in maintenance. If water stands in the hydrant barrel it can freeze in cold weather, and if ground water can flow into the hydrant it is likely to bring with it soil and gravel.

Successful operation of the hydrant drain requires that the hydrant base be located in soil from which there is reasonable drainage. Water department crews are not always as careful as they might be to assure such drainage for hydrants. One way to get the drainage is to dig a generous hole and dump in small stones on which the base of the hydrant is set. If the fire department would see that this is done with each new hydrant its hydrant inspection work later will be greatly simplified. Both the water department and the fire department will then have little occasion to be troubled with expensive maintenance of the hydrant installation.

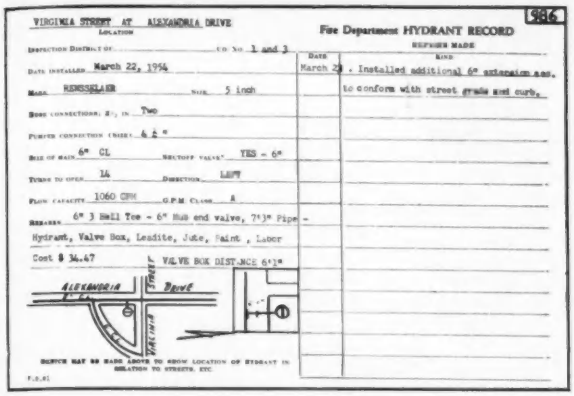
Supervising Use of Hydrants

It is important that the water department and the fire department work out a joint procedure to prevent hydrants from being damaged through misuse. The most practical arrangement usually is to require that the fire company, to which a hydrant is assigned, be notified whenever it has to be used other than for fire purposes. There will be situations where the water department will permit building contractors or others to take water from hydrants for some temporary purpose. The water department and the fire department should agree on a general practice with respect to such use of hydrants.

The water department must know about such use of water to prevent improper use and to make charges for the water. It may also wish to require contractors to post a bond to take care of possible damage. The water department should also require that where it gives such permission for the use of a hydrant that fire department permission also be secured. It is the



Sectional view of a typical hydrant of municipal or private industrial water system.



VIRGINIA STREET AT ALEXANDRIA DRIVE — Location

Fire Department HYDRANT RECORD — 986

Inspection District of ... Co No 1 and 3

Date Installed March 22, 1954

Make RENSSELAER Size 5 inch

Hose Connections: 2½ in. Two

Pumper Connection (Side) 4 & 4

Size of Main 6" CI Shutoff Valve? YES - 6"

Turns to Open 14 Direction LEFT

Flow Capacity 1060 GPM G.P.M. Class A

Remarks 6" 3 Hell Tee - 6" Hub end valve, 7'3" Pipe - Hydrant, Valve Box, Leadite, Jute, Paint, Labor

Cost $ 34.47 VALVE BOX DISTANCE 6'3"

ALEXANDRIA Drive — VIRGINIA STREET

SKETCH MAY BE MADE ABOVE TO SHOW LOCATION OF HYDRANT IN RELATION TO STREETS, ETC.

Date	Kind
March 23	Installed additional 6" extension nec. to conform with street grade and curb.

Illustration of 6 x 8½-in. hydrant record card used by Alexandria, Virginia, Fire Department.

fire department's responsibility to see that the use made of the hydrant is not such as to interfere with the fire department requirements, and to prevent damage to the hydrant through improper operation. For example, the contractor should have proper wrenches to operate the hydrant nut. He should be prohibited from using ordinary pipe wrenches, and could be required to get from the fire department a proper hydrant wrench for using water. This procedure enables the fire department to see that the hydrant is properly used, which is quite important in freezing weather or where the operations of the contractor may interfere with normal hydrant drainage.

Hydrant Inspection

The work of making periodic inspections of hydrants is customarily a fire department responsibility. The fire department crews would not do repair work on hydrants, but the fire department would undertake to inspect hydrants at least twice each year in the spring and fall. In periods of protracted cold, certain important hydrants in high-value districts might need inspection daily. Particularly during freezing weather, hydrants would be inspected after use in fires.

The water department should furnish the fire department with suitable maps of the water distribution system, showing the location of hydrants and the size of mains. These maps would show not only the mains but the location of valves both in the street mains and in the branch lines to hydrants. Each fire company should have on the walls of its station a map showing the hydrants, mains and valves. In the small cities such a map may show the water system of the whole city. In the larger cities it will show that part of the water system with which the fire company is mostly concerned. For example, it would cover the company's inspection district or first alarm district and possibly adjoining districts.

The fire chief assigns to each fire company a certain number of the hydrants and valves in the water distribution system for general supervision. The fire company then should make a card for each hydrant. This card would contain data on the hydrant and its location. It is also used to note dates of inspection and repairs.

Each hydrant has, in addition to the valve which is a part of the hydrant itself, another valve in the branch line on which the hydrant is located. Any particulars relating to the branch line valve can also be noted on the hydrant record card.

The fire company should also have a list of other street valves in the distribution system which are within the district assigned to that company's supervision.

Inspection of the valves on street mains and on hydrant branch lines will not be made by fire companies except to make sure that the gate boxes of such valves are not covered up or obstructed. Contractors sometimes pile material over such gate boxes, and occasionally when a street is repaved the boxes are covered for some time. When fire department hydrants are inspected, the accessibility of all of the nearby gate valve boxes should also be checked.

The actual inspection of hydrants consists of giving the hydrant an operating test by taking off the caps, opening the hydrant valve and letting the water run. This will flush out of the hydrant barrel any sediment or gravel which has accumulated, and will provide a check that the operating mechanism is working properly.

The hydrant is then closed, the caps replaced and the hydrant again opened. At this time it should be noted whether or not the drip or drain valve in the barrel is tight. Then the valve is closed again, and a check is made to see that the drip valve operates properly to drain the hydrant.

After the hydrant is closed, any leaks should be noted which are either in and about the hydrant itself or in mains near the hydrant. The inspector notes if threads of butts and caps are clean, any repairs or painting which are needed, and any obstructions which have developed since the hydrant was installed. On the basis of this inspection, the fire department reports to the water department hydrants that need relocation, repairs or adjustments.

When a hydrant leaks either through the main valve or due to improper operation of the drip valve, or where there are ground water conditions which let water get into the barrel, it may be necessary to periodically pump out the barrel in cold weather during the period which must elapse before permanent repairs can be made or drainage conditions made satisfactory. With inspection of hydrants competently carried out, and prompt repairs, the freezing of hydrants can be reduced to a minimum. Occasionally, when a hydrant freezes, it can be thawed out by means of a steam hose. Portable steam generators are available but they are not very practical, and if a hydrant is frozen it takes, at best, some time to thaw it. The usual procedure is for the fire company to get its water from another hydrant which is not frozen. Thawing a hydrant with a fire, may damage the hydrant.

NFPA Specifications for Valves, Indicator Posts and Hydrants are included in Standards No. 29 A, B, and C, available in the National Fire Codes

VOLUME IV — Extinguishing Equipment

32 standards, 936 pages, $6.00 per copy

Write to:

NATIONAL FIRE PROTECTION ASSOCIATION

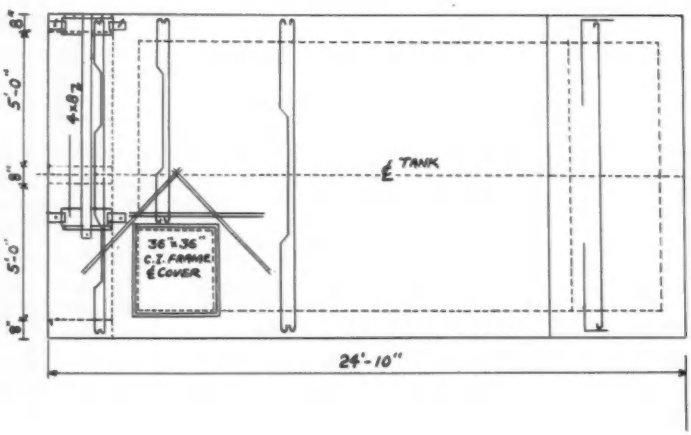
60 Batterymarch Street, Boston 10, Massachusetts

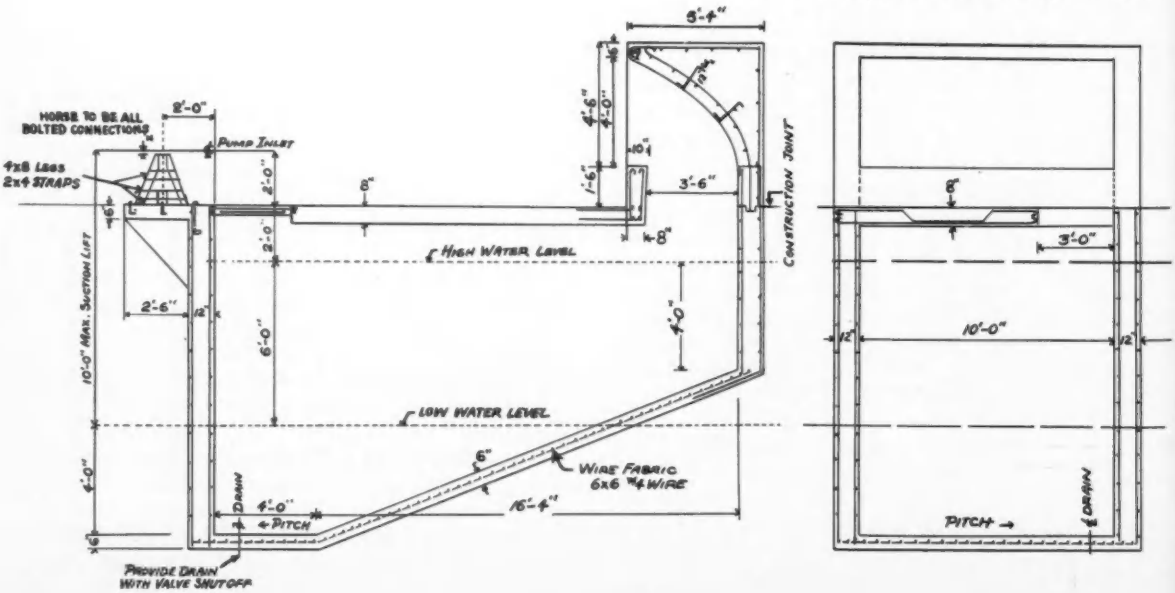
TEST PIT for PUMPERS

FOR many fire departments, a pump test pit on the training grounds or near the maintenance shop can be a practical investment. When properly designed, such pits provide convenient means for training pump operators in drafting operations and also afford sufficient water and ideal conditions for those necessary, periodic tests of pumping equipment. (See NFPA Standard No. 19 — "Specifications for Motor Fire Apparatus," and "Operating Fire Department Pumpers.")

The fire department in Pittsfield, Massachusetts, headed by Chief Ward G. Whalen, makes good use of the reinforced concrete installation shown on this page. Designed by the architectural firm of Bradley and Gass in that city, the pit normally contains about 90,000 gallons of water when filled to capacity. Suction hose from the pumper under test is placed on the 2-ft. high wooden horse bolted in front of the pit. While the pit is 12-ft. deep, the distance from the pumper inlet to the designed low water level is just 10 feet, the maximum lift required for proper testing of a pumper's suction capability. Pump discharge streams can be directed against the parabolic curve at the back of the pit, permitting re-use of the water.

Many construction details of the Pittsfield test pit are not shown in these drawings. However, general details listed below indicate its adequacy and durability. Fire chiefs desiring similar installations may utilize this design to obtain detailed construction information and cost estimates from local architects.





General Details in Specifications

All concrete shall be 2,500 lbs. per sq. in. in 28 days.

Reinforcing shall be standard deformed bars.

Provide ½-in. rods and metal high chairs for all top reinforcing in slabs.

Provide ½-in. rods 18 in. on center spacers in all one way slabs.

Contractor shall submit checked shop drawings and placing plans for all reinforcing and shall receive the written approval of the Engineer before fabrication.

Provide bar supports, spacers, and accessories recommended by the American Construction Institute Detailing Manual. All detailing not covered by the drawing and these notes shall be in accordance with this same Manual.

Clear concrete protection: Walls — 2 in. adjacent to fill and water; 1½-in. elsewhere; Slabs — 2 in. underside; ¾ in. elsewhere.

Top rods in slabs shall be extended to ¼ of the longer adjacent clear span.

Bottom slabs of tank on fill to be reinforced with 6 by 6 No. 4 wire fabric. Lap 6 in. at splices.

Free Pamphlets on Gas

TWO useful and informative publications describing the properties of natural gas are available free to interested fire fighters. One is an 8-page illustrated booklet titled "Facts About Natural Gas for the Protective Services," prepared by the Southern Counties Gas Company, P. O. Box 2736, Terminal Annex, Los Angeles 54, California, which describes transmission and distribution mains and properties of natural gas, including requirements for complete combustion and recommendations for controlling hazardous situations.

The second booklet is an 8½- by 11-in. 6-page folder prepared by the American Gas Association, 420 Lexington Avenue, New York City, New York. It describes properties, characteristics and combustion of natural gas and suggests a fire department program for handling situations in which escaping natural gas is involved. Copies may be obtained by writing to the companies at the above addresses.

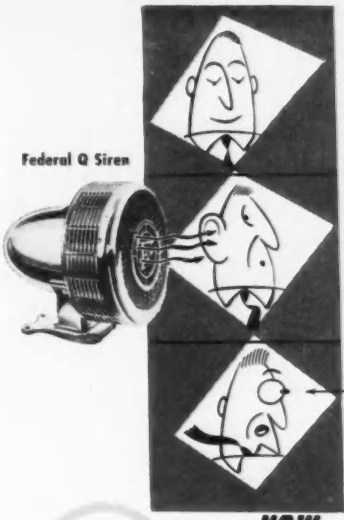
Fire Fighters' Town

IN DECATUR, MICHIGAN, families of volunteer firemen are being used to support the fire department when it responds to alarms. Older members of families in the town and volunteers who are too old for active fire fighting are being utilized as traffic officers to keep spectators from interfering with operations of the department on the fireground.

Wives of the volunteer fire fighters have been organized into teams to take turns calling all firemen to make sure that they are aware of each alarm. Previously the department found that about half of the volunteers failed to show up at fires because they did not hear the warning siren.

Maxim Joins Seagrave

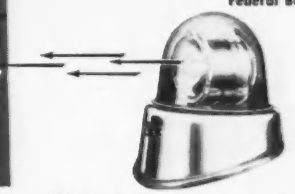
EFFECTIVE December 29, 1955, the Maxim Motor Company, Middleboro, Massachusetts, became a wholly owned subsidiary of the Seagrave Corporation of Columbus, Ohio. According to an announcement by the latter firm, there will be no change in the management of the Maxim Company nor in the sales, service and production policies.



Man is a creature of habit. Habit makes a man respond involuntarily to the sound of a siren, no matter how often he hears it. Instinctively it means warning or danger.

Good Habits

Federal Beacon Ray Light



NOW, in a little over six years, a new type warning has ingrained itself into man's subconscious. Visually, the FEDERAL Beacon Ray light's lightning-like pulsating beams, instinctively mean danger, and habit again makes response to the Beacon Ray's warning instantaneous!

A FEDERAL Q siren and Beacon Ray light on your fire apparatus is your assurance of instant response to your familiar call for action. DON'T OPERATE WITH OBSOLETE WARNING SIGNALS. Equip with a FEDERAL Coaster Siren and Beacon Ray light, NOW! Specify FEDERAL on your new equipment. Write for literature today!

SIGN and FEDERAL SIGNAL Corporation

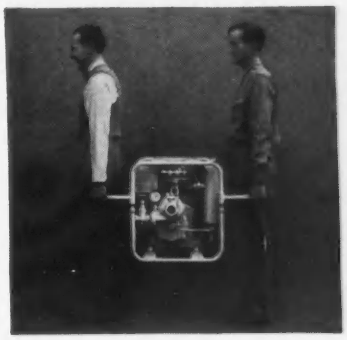
8717 S. State St., Chicago 19, Ill.

3 WORKHORSES for YOU
With Amazing Performance

HALE Portable Pumping Units

	U. S. Gallons Per Minute	*Disch. Press. Lbs. Per Sq. In.*
FZZ	60 100	90 70
FZ	50 300	60 10
HPZF*	15 28	200 150

**A New Unit*



These 3 pumping "Workhorses" provide amazing volumes and pressures for efficiently fighting a great variety of fires. All three units are conveniently portable by two men; can be easily mounted or carried on any type of apparatus for fighting fires while in motion from booster tank; often used to pump from inaccessible water source into major pumper, or to fight fires direct.

Fire Pumps in All Standard Capacities

Write for Circulars on Models FZZ, FZ and new HPZF—at least one of which is sure to meet your fire fighting requirements. Ask for demonstration; no obligation.

HALE FIRE PUMP CO.
Conshohocken, Pa.

...in heaviest smoke and toxic gases...

BREATHE FRESH, PURE AIR!

Be sure the men in your department have the protection, comfort and confidence provided by an abundant source of pure, fresh air supplied by a *Cornelius portable air compressor*.

Model 130R1500 (3000 PSI)

NEW Cornelius AIR COMPRESSOR

NEW lighter weight—only 38 lbs.
NEW smaller size—only 17 in. high
NEW lower cost
NEW higher air capacity
NEW air freshness with high pressure air purifier

Call your distributor or write for free catalog.

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550 - 39th Avenue N. E.
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Better Hose Care-with CIRCUL-AIR HOSE CONDITIONING EQUIPMENT

WASHERS • DRYERS • TURN-TABLES • STORAGE RACKS

FIRE HOSE DRYER

The patented, electrically operated Circul-Air hose dryer circulates pre-warmed fresh air through loosely coiled hose at the rate of 5 to 6 air changes per minute. Saves floor space, hard work and lengthens hose life! No other drying method is so fast — so economical — so easy to use.

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USED IN OVER 3,000 LEADING FIRE DEPARTMENTS

Roto-Jet FIRE HOSE WASHER

Washes, Rinses, Drains hose thoroughly and quickly. Hose is self-propelled. Simple one-man operation. With or without detergents ashes, dirt, mud and sludge are automatically scrubbed out and flushed away.

WRITE FOR NEW FOLDER

If you are planning to build or remodel, send for our brochure "Fire Station Design."

THE CIRCUL-AIR CORPORATION 575 EAST MILWAUKEE DETROIT 2, MICHIGAN

On-The-Spot Radio Coverage

UNUSUAL programs of on-the-spot coverage of fires in New York City are now being featured by radio station WCRA — WCRA-TV. As an affiliate of the National Broadcasting Company, the station, on January 9, began a "Fire-Away" campaign in an all-out crusade against "preventable" fires in the city. Fire Commissioner Edward F. Cavanagh, Jr., pledged the full support of the department when he participated in the first broadcast.

For the past several weeks the station has had a mobile unit operating round-the-clock featuring 2-way radios. The unit generally is stationed at the central fire alarm station in Central Park. When a call is received the mobile unit travels with the fire apparatus to the fireground and announcer William A. Berns broadcasts on the way to the scene. Reports are made on the general obedience to the "yield of right of way" laws. On the fireground WCRA reporters attempt to give detailed account of the fire cause, a description of the methods of fire fighting and interviews with fire officers and fire fighters. Night-time reports are broadcast during a midnight to 6 a.m. program. In addition, a saturation campaign of spot announcements on fire prevention is scheduled to be broadcast over the radio and television stations during the coming months.

Got A Mascot?

MAX L. Fraker, 202 Brady Lane, Urbana, Illinois, is trying to determine how many fire stations in the U. S. have dogs as mascots. At present he is honorary president of the Champaign County Humane Society and would appreciate hearing from readers of FIREMEN magazine who would like to send him the name and description of their dog mascots.

Make your plans now to attend the 60th NFPA Annual Meeting Hotel Statler Boston, Massachusetts June 4–8, 1956

New Members in NFPA

THE following fire chiefs and fire departments recently joined the Association:

Arizona: Goodyear Volunteer Fire Department, Goodyear.

Arkansas: Bentonville Fire Department, Bentonville; Camden Fire Department, Camden.

British Columbia: Chief E. Miller, Richmond Volunteer Fire Department, Steveston.

California: Tulare Fire Department, Tulare.

Colorado: Brush Volunteer Fire Department, Brush; Assistant Chief John DeJong, Denver Fire Department, Denver; Englewood Fire Department, Englewood; Chief Frank Kreps, Grand Junction Fire Department, Grand Junction.

Connecticut: North Windham Fire Department, Inc., North Windham.

Florida: Chief F. C. Kelley, Jacksonville Fire Department, Jacksonville.

Louisiana: Jonesboro Volunteer Fire Department, Jonesboro.

Maine: Chief Bertrand I. Engley, Lincolnville Volunteer Fire Department, Inc., Lincolnville.

Maryland: Chief Spencer Brown, Jr., Sandy Spring Volunteer Fire Department, Sandy Spring.

Massachusetts: Chief Henry L. Hilton, Andover Fire Department, Andover.

Michigan: Chief Val Naert, Meridian Twp. Fire Department, East Lansing.

Minnesota: Bagley Fire Department, Bagley.

Nebraska: Chief Marion Hart, Bartley Volunteer Fire Department, Bartley.

New Jersey: Brigantine Fire Department, Brigantine.

New Mexico: Loving Fire Department, Loving.

New York: Chief George R. Bingay, Centereach; South Queensbury Volunteer Fire Company, Glens Falls; Hastings Fire Department, Hastings.

Ohio: Greenfield Twp. Fire Department, Carroll; Montville Fire Department, Montville; New Carlisle Fire Department, New Carlisle; Moorefield Twp. Volunteer Fire Department, Springfield; Springfield Twp. Fire Department No. 2, Springfield.

Ontario: Chief A. F. Pagel, Waterloo Fire Department, Waterloo.

Oregon: Chief Arthur M. Lund, Irving Fire Department, Eugene.

Pennsylvania: Erie Fire Department, Erie.

Virginia: Chief T. W. Helms, Lorton Volunteer Fire Department, Lorton.

Washington: Kitsep County FPD-16, Bremerton; Grandview Washington Fire Department, Grandview.

Wisconsin: Okauchee Fire Department, Okauchee.

YOU CAN POLISH THIS BADGE FOR A.. Lifetime

HERE IT IS THE NEW BLACKINTON HI-GLO BADGE

Only a Solid Gold Badge or a **HI-GLO** Badge will last a lifetime.

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. because this new **HI-GLO** Badge is different. It is made from an entirely new material — a rich looking golden metal that is solid gold color throughout. That's why you can polish a **HI-GLO** badge for a lifetime. Every **HI-GLO** badge will have deluxe enamel lettering and a ruby colored stone (optional at extra charge) set in the eye of the eagle. You can see, the new **HI-GLO** badges will be something special, a distinctive badge for those who want the very finest gold color badge.

Your Blackinton equipment supplier has samples of the new HI-GLO badge. Ask him for more information.

BLACKINTON
V. H. BLACKINTON & CO., INC.
ATTLEBORO FALLS, MASSACHUSETTS

YOUR FIRE SCHOOL CALENDAR

Alabama: The 20th State Fire College will be held in University, Alabama, May 28–June 1. For further information write to M. O. Hulsey, P.O. Box 1813, University, Alabama.

Arizona: The State Fire Training School will be held in Phoenix, October 24–26. For further information write to Batt. Chief Jake Siken, 49 South 1st St., Phoenix, Arizona.

California: The Fire Service Instructors Conference will be held in Fresno, May 21–25. The Fire & Arson Investigation Short Course will be held in University of California, Berkeley, June 11–15. For further information write to Thomas S. Ward, State Department of Education, 721 Capitol Ave., Sacramento, California.

Colorado: The Colorado State Firemen's Convention & Fire School will be held in Durango, June 20–23. Write to Lou Gibbs, 1331 Garfield Ave., Loveland, Colorado.

Georgia: The Georgia State Fire College will be held in Atlanta at No. 7 Fire Station. The Officer Training Course and 24th Annual State Fire College, May 7–8, Instructors Course, June 4–5, Arson Investigators Course, July 9–10, Inspectors Course, September 3–4, and Fire Engineers Course October 8–9. For further information write to Harry Phillips, 46 Courtland Street, S. E., Atlanta 3, Georgia

Idaho: The Idaho State Fire School will be held in Boise, in the middle of June. For further information write to Dick Ransom, Fire School Association, Ketchum, Idaho.

Illinois: The 32nd Annual Illinois Fire College will be held in University of Illinois, Champaign-Urbana, June 11–14. Regional schools will be held at Centralia, April 12 to May 17 and Danville, April 13 to May 18. Write to Robert K. Newton, 116D Illini Hall, Champaign.

Indiana: The 23rd Annual State Fire School will be held in Purdue University, Lafayette, September 11–14. Write to Professor Shelby Gallien, Purdue University, West Lafayette.

Iowa: The 32nd Annual State Fire School will be held in Iowa State College, Ames, May 22–25. For further information write to Keith Royer, 110 Marston Hall, Iowa State College, Ames.

Kansas: The 27th Annual Kansas Fire School will be held in University of Kansas, Lawrence, October 15–18. Write to Clyde A. Babb, 111 Fraser Hall, Lawrence.

Kentucky: The Kentucky Fire School will be held in University of Kentucky, Lexington, June 5–7. Write to John L. Thompson, 940 Starks Bldg., Louisville, Kentucky.

Louisiana: The Louisiana State Fire College will be held in Baton Rouge, April 9–12. Write to Chief Robert A. Bogan, Fire Department Headquarters, Baton Rouge.

Maryland: The 23rd Annual Short Course for Firemen will be held in University of Maryland, September 4–7. For further information write to Robert C. Byrus, Box 85, University of Maryland, College Park.

Michigan: The 28th Annual Michigan Fire College will be held in University of Michigan, Ann Arbor, June 19–22. Write to Francis Hartman, 4524 Administration Bldg., University of Michigan, Ann Arbor.

Minnesota: The Minnesota State Fire School will be held in University of Minnesota Farm Campus, April 23–27. Write to Dr. J. O. Christianson, University of Minnesota, St. Paul.

Mississippi: The Mississippi State Fire School will be held in Mississippi State College, Starkville, June 18–22. Write to Joseph I. Fetters, University of Missouri, Room 101, Bldg. T-11, Columbia.

Missouri: The 20th Annual Central Missouri Fire Conference will be held in University of Missouri, Columbia, July 24–26. Write to Joseph I. Fetters, Room 101, Bldg. T-11, Columbia.

Nevada: Training sessions by itinerant instructors are held for the fire departments of this State. Write to F. I. Wallace, State Supervisor, Trade & Industrial Education, Carson City.

New Hampshire: The New Hampshire State Fire School, probably at Grenier Field in late September. For further information write to H. Swain, Dir. Trade & Industrial Div., Department of Education, State House, Concord.

New Mexico: The State Firemen's Association Convention and Fire School will be held in Las Vegas, June 11–13. Fire Marshal's School in early August. Write to John B. Woodall, State Department of Insurance, Santa Fe.

North Dakota: The North Dakota State Fire Officers School will be held in State Teachers College, Minot, March 19–21. For further information write to Chief Gilbert C. Malek, Fire Department Headquarters, Minot.

Oklahoma: The Oklahoma State Fire School will be held in Stillwater, April 23–27. For further information write to R. J. Douglas, A & M College, Campus Fire Station, Stillwater.

South Dakota: The South Dakota Firemen's Association and Fire School will be held in Brookings, June 18–22.

Specify HALE

- Completely Modern
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- Rugged
- Compact
- Conservatively Rated
- Sold thru Mfrs. of Quality Apparatus

VALUABLE TIME SAVED: While we have always emphasized *Reliability* of priming rather than *Speed* of priming, we cannot help taking pride in the results obtained in the test shown in this picture. PRIMING TIME (Water out the Nozzle) WAS BETTER THAN 18 SECONDS FOR THIS HALE QL PUMP ON A 22-FOOT LIFT! This was done at reasonable Engine speed in both series and parallel.

Minimum specifications require priming on a 10-foot lift in 30 seconds. A substantial reserve on all HALE products is a consistent HALE policy.

Send today for QL Bulletin 334. HALE pumps are built in all standard capacities.

HALE FIRE PUMP CO.
Conshohocken, Pa.

For further information write to Joseph I. Fetters, Room 101, Bldg. T-11, Columbia, Missouri.

Tennessee: The Tennessee State Fire Service School will be held in Mid-Tenn. State College, Murfreesboro, August 20–24. For further information write to Homer S. Elkins, 215 Chestnut Street, Chattanooga, Tennessee.

Texas: The Texas Firemen's Training School will be held at Texas A&M College, College Station, July 8–13. For further information write to Henry D. Smith, Firemen's Training School, A&M College, College Station.

Utah: The Twelfth Annual Firemen's Training School will be held in Salt Lake City, June 21–23. For further information write to D. E. White, Asst. Chief, 140 E. First Street, South, Salt Lake City.

Virginia: The Virginia State Fire School will be held in Norfolk, Sept. 10–14. For further information write to Clay A. Easterly, P.O. Box 1112, Martinsville.

Washington: The Annual Fire Training Conference will be held in Everett, July 18–21. For further information write to Capt. J. R. Cook, Washington State Firemen's Assn., N223, 1712 Harvard Ave., Seattle, Washington.

West Virginia: The West Virginia State Fire School will be held in Morgantown, July 23–27. For further information write to R. E. Hanna, Jr., Fire Service Extension Schools, West Virginia University, Morgantown, W. Va.

Wisconsin: The University of Wisconsin Fire School will be held in University of Wisconsin Madison, August 13–15. For further information write to James J. Lichty, Supervisor, P.O. Box 2098, Madison 5, Wisconsin.

Occupancy Fire Record

LATEST in the series of Occupancy Fire Records published by the NFPA Fire Record Department is FR 56-1, "Motion Picture Theatres." Priced at 50¢ per copy, the 16-page, 8½- by 11-in. illustrated booklet describes motion picture theatre fires and factors contributing to fire spread in 100 incidents. The latter portion of the booklet is devoted to tables showing theatre sprinkler performance, point of origin of 100 theatre fires and a statistical breakdown on known causes of such fires. In addition, the booklet refers to the elements of the Building Exits Code which would apply to such occupancies and also lists some recurring factors responsible for fatalities in 30 typical loss-of-life fires.

Copies may be obtained from the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass. Generous discounts are allowed for quantity purchases.

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The "NEW YORKER"
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The "SEAMLESS"
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The "SENATOR"
REGULATION

No. 710
The "STREAMLINER"
DROP BRIM

IN "FLINT-FLEX" PLASTIC

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The "CLIFTON"
REGULATION

No. 725
The "CAVALIER"
DROP BRIM

We can supply everything the fireman needs for his personal equipment. Write for Catalog 350.

CAIRNS & BRO., Inc. — Allwood, Clifton, N. J.

SINCE 1836

"Swapping" Ideas in "Philly"

(Above) Probationary fire fighters demonstrated training evolutions at Philadelphia's modern 5-story drill tower. (See FIREMEN for December, 1952.) Other Fire Department members also take periodic "refresher" courses at this training school. **(Below)** Visitors pose with Philadelphia's new 100-ft. Magirus aerial ladder. Captain Gibbs, aide to Deputy Commissioner Hink, is at left; while at right is Battalion Chief Joseph F. Meskill, who is in charge of training at the school.

FIRE departments of Boston, Massachusetts, and Philadelphia, Pennsylvania, during the past few years have undergone considerable change. Both cities feature capable and aggressive fire commissioners and fire officers, under whom the fire departments have adopted new techniques and new standards of operation and administration. Philadelphia twice in the past four years has won the Grand Award in the NFPA Fire Prevention Week Contest.

Recently, with Warren Y. Kimball, Manager, NFPA Fire Services Department and Editor of FIREMEN, Fire Commissioner Francis X. Cotter of Boston visited Philadelphia to observe some of the new equipment and operating methods of the fire department, and to exchange ideas with that city's Fire Commissioner Frank L. McNamee and Deputy Commissioner George E Hink.

Shown above are (left to right): Warren Y. Kimball, Deputy Commissioner Hink, Commissioner Cotter, Commissioner McNamee, and NFPA President T. Seddon Duke, who is also President of the Star Sprinkler Company of Philadelphia.

New Pumper for Gallup, New Mexico

Recently delivered to the Gallup Volunteer Fire Department was this 750 gpm Class B Seagrave pumper. Mounted on a GMC chassis, it has dual booster reels with 200 ft. of hose in each reel; a 4½-in. suction inlet and a 2½-in. suction inlet on the left side; a hose bed with capacity for 1,800 ft. of 2½-in. hose and 400 ft. of 1½-in. hose; and a 500 gallon tank. It also feaures a pre-connected 2½-in. line at the rear gated to a 1½-in. wye connection and controlled from the pump panel. An Akron "Multiversal" deluge nozzle is mounted on the deck. Note that compartments are provided in front of and behind the rear wheel.

NEW FUND-RAISING PLAN for your organization

Sell Our Most Diversified Line of Calendars, Thermometers and Advertising Specialties

Attention Fund-Raising Committees! Add money continuously to your group treasury for new equipment and maintenance needs. Top commissions paid weekly with cash bonus. Excellent spare time money-making opportunity for call firemen. Fullest cooperation, supplying sales ideas by weekly bulletins. Refundable $1.00 deposit brings samples prepaid.

JOHN WAEHNER MFG. CO., INC.
302 Irving Ave., Brooklyn 27, N. Y.

Look what's happened to Fire Pumps

Waterous announces first fully power-controlled fire pump

(A)

Here's a fire pump which introduces a new era in fire fighting equipment. The new WATEROUS *Electro-Matic** is entirely new in design for latest fire service chassis, and offers full power control for each vital step in pump operation.

This new concept in operating speed and simplicity is made possible only through WATEROUS designs. Built into the *Electro-Matic* are latest electric power controls which have been proved thoroughly dependable in thousands of automotive applications. (B)

Electric shifting. (A) Takes but a flip of a switch to engage pump.

Push-button priming. (B) Press a control panel button, and the famous WATEROUS electric primer leaps into action.

Electrically operated transfer valve (C) is independent of engine speed or pump pressures. Change-over, which can be made at any rated pressure setting, is rapid, yet never so sudden that it produces shock pressure changes.

When switch is flipped from "pressure" to "volume" (or vice versa) indicator lights show instantly when change is completed.

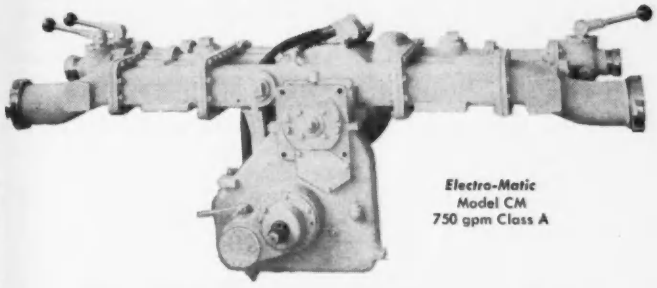
Power-operated discharge valve. (D) Simply push a button to adjust the valve setting! Lift your finger, and it locks in the position. The control panel dial instantly shows the valve setting.

Check these additional control features. The relief valve, mounted on the panel, can be put into or taken out of operation *hydraulically* without cancelling pressure setting. The new manifold drain valve, with a single panel-mounted control drains *8* points simultaneously.

Higher performance — Minimum space. The *Electro-Matic*, with specially designed impellers and scientifically contoured waterways, provides higher performance with minimum over-all space requirement. (C)

Dependability assured. Helical, constant-mesh transmission gears are incorporated in the *Electro-Matic* together with famous WATEROUS design features including: easy-to-remove, horizontally split, two-piece casing; 3 outboard oil-lubricated impeller shaft bearings; water-lubricated stuffing boxes with split glands. These features are all retained in the *Electro-Matic* to assure utmost dependability.

If your community is in the market for a new pumper, you'll want to learn more about the modern *Electro-Matic* Fire Pump, now available in 500, 600, 750, and 1,000 gpm Class A capacities. Write Waterous Company, 42 Fillmore Ave., St. Paul, Minn.



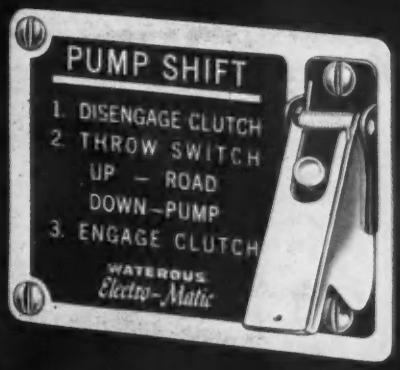
Electro-Matic
Model CM
750 gpm Class A

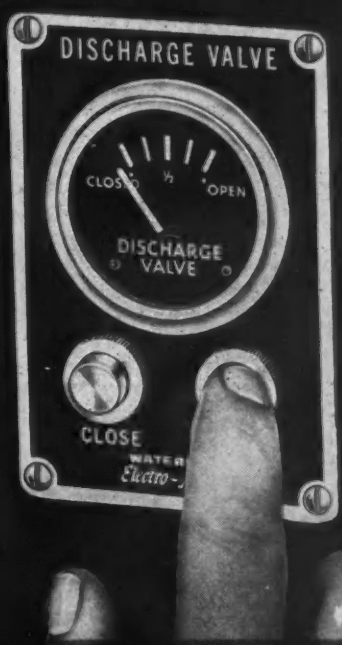
(D)

WATEROUS

Electro-Matic

*Registration applied for.





Letters to FIREMEN

Gentlemen:

Although I am not a physician, I would like to express my opinions on the articles concerning "First Aid Training" by Dr. Irwin (Sept., 1955) and Dr. Claudy (Dec., 1955). I am a lieutenant on the Oak Forest Volunteer Fire Department, in charge of the rescue squad. I am also an instructor in first aid under the American Red Cross. My opinions and statements are my own and do not involve my department or the American Red Cross.

I am in agreement with Dr. Claudy — first aid cannot be taught in two hours. The subject, as taught through the A.R.C., is planned for the lay first-aider.

Dr. Irwin states that first aid is not a treatment, that the first-aider is not expected to make an exact diagnosis, and that overly-enthusiastic "so-called" first aid may be very harmful to a patient.

Much to the contrary, first aid is the immediate and temporary care given the victim of an accident or sudden illness until the services of a physician can be obtained. This is treatment, for one cannot give first aid without giving treatment, although it is temporary. True, the first-aider is not expected to make an exact diagnosis of a case, but he should have a good and general idea of what is wrong with the victim and how to treat him.

If a person is properly trained in first aid they will not give "overly-enthusiastic" first aid. It is the person who has not been properly trained, but thinks that he knows first aid, who causes additional injury. I am sure that every firemen and doctor encounters the "know it all" on practically every accident.

Dr. Irwin states that specifically bleeding and breathing must be cared for. This is true, but a third — poison — should be on the list also. In many cases children are apt to grab something poisonous. Of course, there are attempted suicide calls in the case of adults. The treatment for fast action, and the two exceptions in poisons and their treatment, should be taught the common "lay first-aider."

Dr. Irwin's method of splinting legs seems a little crude. This type of splinting is done when proper equipment is not available. In reference to pain here is a case where the *proper* immobilization helps to ease the pain of a fracture and also helps to prevent added injury. Dr. Irwin suggests that the splinting of the arm is not advised. This would depend upon the circumstances involving the injury.

I cannot agree with Dr. Claudy's suggestion for traction splints. As he knows, proper use of the traction splint is important and much harm can be done if it is used improperly. I do not believe that traction splinting should be used unless it is done by an experienced first-aider. In fact, we have removed our tractions splints from our emergency squad, as have many other departments, since all of the men are not experienced enough to use them . . .

. . . In discussing head injuries, Dr. Irwin mentions only one symptom that needs first aid — obstruction of breathing by either blood or vomit. What of a concussion? The victim should be kept quiet and lying on his back. If a victim has a broken back or neck he should be on his back, not on his side. If with a broken back the victim is placed on his back on a hard surface his back should have a support under what is commonly known as the small of the back.

A new method of transporting a person with an injured back is to have the victim lie on his stomach. Of course, if the neck is broken, this cannot be done — the victim must be on his back.

What of shock — the deadliest of all effects on an injured person? Although shock may not be present immediately, preventive measures should be taken. This phase of first aid should take at least one half-hour.

CHECK and COMPARE WITH OTHER MAKES

A Recent Delivery to WESTFORD, N. Y.

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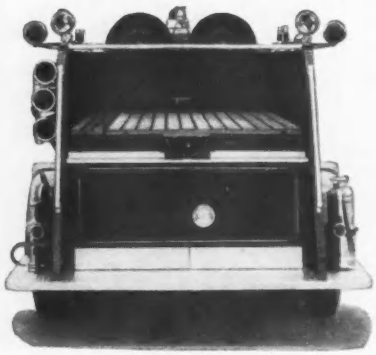
When you and the other officials of your town purchase a Darley Champion Fire Apparatus you are giving your community the best fire protection money can buy, and your taxpayers will like the savings.

Because we make both Fire Pumps and Fire Apparatus, we can and do give you everything of the best and save you money too.



Carries its own water supply (500 gallons) and 1400 feet of fire hose.

When buying Fire Apparatus for your community, check and compare the Darley Champion with any other make. We welcome your comparisons first, and then our low quotation will surprise and please you even more.

For example, the Champion shown above, a 750 Gallon Pumper with High Pressure Fog performance, may fit your budget much easier than you think.

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Dr. Irwin stated first aid is common sense. This is true, but unless properly trained in the knowledge of first aid, a person cannot give proper treatment to a victim, or be of much help with only common sense as a guide.

. . . Any fire department, police department, or plant organization planning a training program should include a full first-aid course. After the members are properly trained they will feel that they are able to help accident victims competently, and that they may save lives when called to duty.

Respectfully submitted,
Jack H. Lee.

Gentlemen:

. . . concerning Dr. Irwin's article "Practical First Aid" I refer you to the definition: "First aid is the immediate and proper temporary care given the victim of an accident or sudden illness until the services of a physician can be obtained." In the Hillsdale, New Jersey, Fire Department there are two pumpers, a ladder truck and a 1954 ambulance. In our town of 18,000 people we have not had any difficulty with the 17 doctors who serve the citizens — matter of fact, we have been commended many times for our work.

As we understand it, in every case proper first aid reduces suffering and makes the physician's task easier when he assumes care of the patient. We didn't pay much attention to the article by Dr. Irwin, but we heartily endorse Dr. Claudy's article.

Yours truly,
R. C. Appeld
Board of Fire Officers
Hillsdale Firemen's Ambulance Service
Hillsdale, New Jersey

On Hydrant Rings

Gentlemen:

With reference to the article "Hydrant Ring" in the February issue, the use of hydrant rings was discontinued by the fire service in the State of New Jersey about thirty years ago, when firemen were being hospitalized with smashed fingers which had been caught between rings and hydrants. The rings were also prohibited from use in contest work in New Jersey.

From a safety standpoint, if the apparatus comes to a *full stop*, to allow the hydrant man to take preliminary steps in his "hookup," it is not necessary to use any "gimmicks."

Yours truly,
Chief F. K. Vaugoin,
Fire Headquarters,
Raritan Arsenal,
Metuchen, New Jersey.

Do you have some comments on articles in FIREMEN Magazine? Or some questions? If so, send a note to:
NFPA Fire Services Department
60 Batterymarch St., Boston 10, Mass.

KOHLER Electric Plants

...independent electricity for floodlights, power tools, rescue trucks, civil defense

MODEL 1.5M25, *1500 watts, 115 volt AC. Manual starting. 2500 watt AC portable models also available.*

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For civil defense, Kohler automatic stand-by plants safeguard lighting and communications. Portable models supply power for rescue trucks. Write for folder K-10.

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THE ECONOMICAL AND EFFICIENT WAY TO CARRY AND STORE WATER.

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Write TODAY for Full Information and Price List
HARODIKES INCORPORATED
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Leader Line Water Thief

Plate 240

2½" quarter-turn valve on straight-way connection and 1½" quarter-turn valve on sensible lug swivel. Rough body, painted red, with polished bronze or chromium plated trim. Leather carrying strap.

Write for complete, new Catalog

POWHATAN BRASS and IRON WORKS
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Safety Clothing for FIREMEN

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YOU deserve the BEST PROTECTION OBTAINABLE for your hazardous work of protecting life and property against fire. The Mackinaw Safety Coat with new yellow stripes is the answer! Highly visible stripes are rubberized as part of the material . . . not painted, glued or sewed on. There is no substitute for the superior quality, design, fabric texture and safety features you get by specifying MIDWESTERN!

QUALITY UNEXCELLED

For complete information on our full line of safety clothing for firemen, see your Midwestern dealer. A letter to the factory will also bring you literature and materials for your inspection.

MIDWESTERN SAFETY MFG. CO. Mackinaw, Illinois
Manufacturers of the Famous **MACKINAW Safety Coats**

Ten Die in Maryland Fire

(Continued from page 8)

from a small wooden ladder, the flames spread up the roof and into the concealed attic space between the combustible fibreboard ceiling and the arch type roof.

A few minutes later people inside the building saw smoke and fire coming between the ceiling and the wall in one corner of the hall. One man discharged a carbon dioxide extinguisher at the flames which disappeared momentarily. The owner of the building then ordered one of his employees to get a step ladder, and suggested that another employee call the fire department. The first alarm was received at fire headquarters at 5:08 p.m.

The employee with the ladder climbed to a trap door in the ceiling, looked into the attic space and saw that fire apparently involved the whole area. He closed the trap door quickly and the owner then ordered employees to clear the hall. As the people started to move towards the exits a "swoosh" was was heard and fire and smoke came through the ceiling in several places. Immediately there was a general rush for all available exits and the windows. The main hall had three 3 ft. exits leading directly outside, one 3 ft. exit leading to the main entrance (a 6 ft. double door), and two 6 ft. exits, one leading to the milk bar, the other to the cocktail lounge. All doors were wooden and were equipped with panic hardware. Apparently most of the exits were marked and lighted. In addition, there was a 4 ft. door leading directly outside from an attached kitchen and two overhead garage type doors which measured 13 ft. 6 in. wide by 12 ft. high, manually operated on tracks and spring loaded. One of these doors was at each end of the hall.

The ten women who died in the building varied in age between 28 and 82. Their bodies were found together on the floor about halfway between the front garage type door and a side 3 ft. exit, but it was not until two hours after the fire started that fire fighters were able to enter the building.

Be sure to mention FIREMEN when writing to advertisers.

Lightweight Radios

FIRE DEPARTMENT communications and operating efficiency are benefiting from the increasing use of transistors, plated circuitry and lightweight long-life power packs in compact portable radios. Typical of such new equipment is an interesting new line of portable "radiophones' made by Motorola Technical Information Center, 4545 W. Agusta Blvd., Chicago, Illinois.

The "radiophones" are single frequency transmitters with single frequency receivers designed to operate in the 144–174 mc. range. The unit is equipped with a standard lightweight dry cell battery power supply and a telephone handset.

The complete line of this equipment includes models with RF power output ratings from 1 to 8 watts. The lightest and smallest model weighs only 7 lbs. 9 oz. complete, while the 8 watt model weighs only 15½ lbs. A "snap-on" power pack permits use of dry and wet cell batteries or 117 VAC power packs.

The handset bracket also serves as a carrying handle or the unit may be worn under the shoulder. There is an automatic "off" button which is depressed when the handset is returned to the bracket. The button is manually turned to operate the receiver while the transmitter is placed in operation by use of the "push-to-talk" button on the handset. Further information on these units may be obtained by writing to the manufacturer at the above address.

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difference*

This violin cost $39.95 plus tax. It looks *exactly* like the violin shown below, but . . .

This violin— a genuine Guarnerius— would cost $2,700.00— if you could buy one!

*The important difference, of course, is *what you want to do with the instrument.* You wouldn't give a student a Guarnerius— nor a concert artist a beginner's instrument.

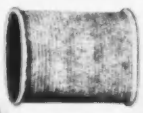
THE *SAFEST* INVESTMENT IS BI-LATERAL FIRE HOSE . . . IT COSTS *LESS* TO BUY THE BEST!

If you want safety AND savings, one way to be sure is to *look at the record!*

Bi-Lateral furnishes *FREE* hose record cards—send for your supply today.

Here's a sample piece of fire hose —it looks just like the piece below—yet . . .

This fire hose is worth 10 times— maybe 1,000 times—as much!



Bi-Lateral hose is built up to a standard not down to a price! There's a *reason* for Bi-Lateral—it's to put out fires! It will prove to be your most *economical* purchase as well as your *safest* investment!

(Bi-Lateral *IS* cheaper *in the long run.* Hose record cards prove it! Send for yours . . . free.)

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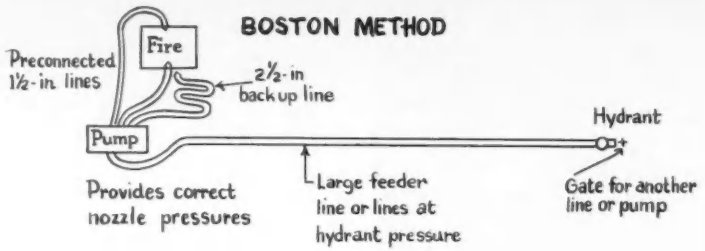
Preconnected Lines

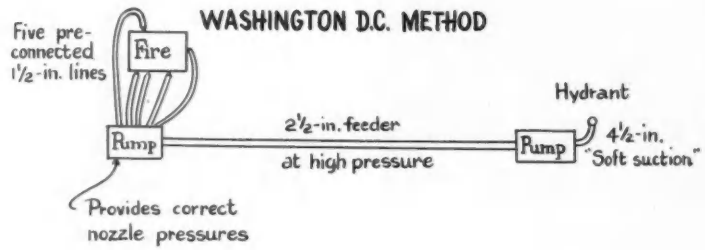
Part II — Heavy Streams

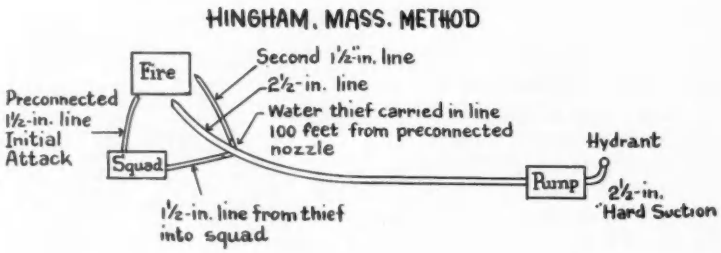
The preconnected line set-up also provides for heavy stream operation. As described in FIREMEN for June, 1955, the Boston practice is to lay two feeders (3-inch and 2½-inch) from the divided hose body when putting the gun in service. Short lengths of 3-inch hose preconnected to the gun reach the pump discharge ports, and the correct pressure is provided by the pump right under the gun, thus giving more effective streams than may be obtained when the pump is at a hydrant some distance away. With an average layout of one 3-inch and one 2½-inch supply line, close to the full capacity of a 750 gpm pumper is obtained. This may be discharged either through a large adjustable fog nozzle or a 1½-inch solid stream tip. In Washington, D. C., two short lengths of 2½-inch hose are carried attached to the permanently mounted wagon pipe, which discharges 500–600 gpm through either a solid stream tip or adjustable fog nozzle.

Reverse Lines and Lays

Because a pump is equipped with preconnected lines does not mean that it cannot be used to make other standard layouts as needed. When the apparatus responds to a multiple alarm where big lines are needed, it may be ordered to operate as a pumper in conventional manner disregarding the preconnected 1½-inch hose. Lines may readily be laid fire to hydrant as well as hydrant to fire, especially if the apparatus has been equipped with reverse outlets and nozzles as described. If a fire is at some location beyond the reach of the longest







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preconnected 1½-inch line, the 2½-inch nozzle carried preconnected to the big line, is run to the point of operation and if the smaller hose is desired it is attached to the tip of the big line. This evolution can be put in service almost as fast as the preconnected small lines by getting sufficient hosemen on the big line. The big line can be reduced after the fire has been knocked down. Where a compartment of spare 1½-inch hose is carried, this can be used to extend the small lines as needed. However, in over 95 percent of the fires the apparatus will be located within reach of a 250 or 300 ft. 1½-inch "preconnect."

Typical Operations

The set-up for preconnected lines should be tailored to meet local conditions. As described in FIREMEN for June, 1955, the Boston system of using preconnected lines with a single piece engine company takes advantage of good hydrant service and uses 3-inch supply lines to feed the pumper at the fire. (High value districts are served by direct high pressure water mains and fire companies operate separate pumper and hose trucks.) In Washington, D. C., (see FIREMEN for May, 1954) all companies operate two pumping engines. The first pumper, designated as the "wagon", carries five preconnected 1½-inch attack lines varying in length, and the second pumper spots at a hydrant and supplies the first pumper through 2½-inch hose.

An interesting variation of the operation is that of the Hingham, Massachusetts, Fire Department which operates with paid officers and drivers supplemented by call men. The department protects an area where average hydrant pressures are low and relatively long lines are not infrequent. A box alarm is struck for all building fires and response includes a squad type truck with a preconnected 1½-inch line and a 400 gallon water tank. Pumpers are loaded to lay from fire to hydrant due to the necessity of pumping on all lines. Nozzles are attached to the big line and 100 ft. behind the pipe is a gated water thief from which two 1½-inch lines may be run. The pumpers connect to the hydrant with a 2½-inch hard suction which is light and easy to use. Experience has shown that this suction will supply two big lines with only 5 pounds residual at the pump. (Larger suction is carried for drafting.) The paid men get the preconnected 1½-inch line in service from the squad, lay out the big line and connect the pumpers to hydrants. As soon as the first call men arrive a 1½-inch donut roll is connected from the water thief to replenish the tank on the squad truck and another 1½-inch line can be run to the fire as needed. Chief Albert W. Kimball of Hingham reports that several fires that appeared sufficiently serious to the first arriving officer to warrant a second alarm have been quickly knocked down by the preconnected line of the unit operated as described.

As with any type of fireground operation, good judgment is needed in spotting the apparatus to leave access for ladder trucks and permit the effective placing of the lines. *(Further discussion of this subject will appear in forthcoming issues of* FIREMEN. — *Ed.)*

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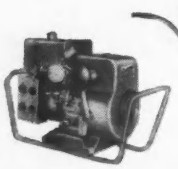
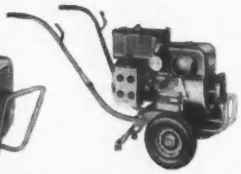


CARRYING FRAME for hand lifting and moving.



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Fire Service Training Films

MEMBERS of the Los Angeles, California, Fire Department, for a number of years have taken part in the production of a variety of interesting fire service training films. The films are available for purchase by any fire department and are useful in training sessions of basic, advanced and special fire fighting evolutions. They may be obtained from Cinesound Company, 1037 N. La Brea Avenue, Hollywood 38, California. The 19 films now available in 16 mm size are listed below, together with their code numbers and prices (at right).

B1 — "Ladders"
B & W—29 minutes — $69.50

B2 — "Hose"
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B & W—33 minutes — 74.50

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A4 — "Ventilation"
B & W—25 minutes — 74.00

A5 — "Company Response"
B & W—12 minutes — 42.50

S1 — "Pump Operator"
Color—26 minutes — 183.50

S2 — "Company Fire Prevention"
B & W—22 minutes — 52.50

S3 — "Fire Safety in Hospitals and Sanitariums"
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S4 — "Brush Fires"
Color—27 minutes — 189.50

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Color—12 minutes — 66.20

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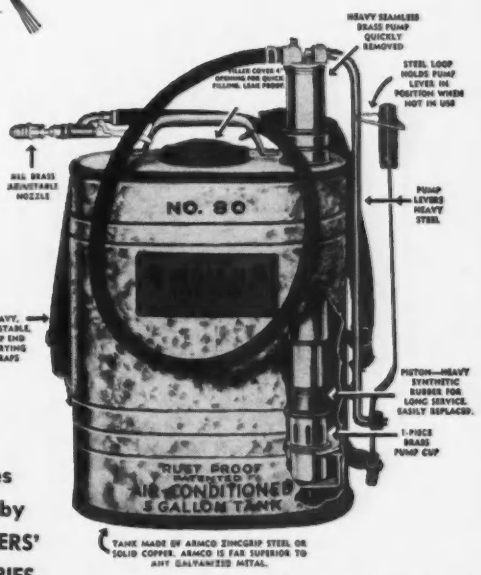
No. 80 LEVER TYPE PUMP and HANDLE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Both Types Approved by UNDERWRITERS' LABORATORIES

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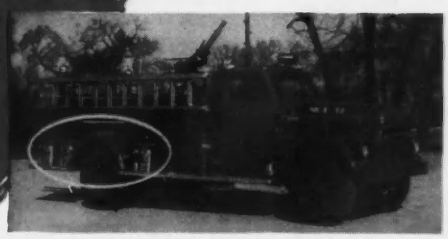

Fire Truck built by W. S. Darley & Co., Chicago, Ill., delivered to Manila Fire Dept., Republic of the Philippines. Note **INDIAN FIRE PUMPS** mounted.

"We have 6 of your **INDIAN FIRE PUMPS** on one of our fire trucks and we have used them 8 years. They are still **just like new.** They are the best things a county fire department can have. I have used them for everything, including grass, house, barn and many other kinds of fires. We like them very much. **There is nothing else like them.**"

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WHAT'S NEW IN FIRE EQUIPMENT?

Synthetic Fiber for Hose

Celanese Corporation of America recently began commercial production of "Fortisan-36", a new synthetic fiber, at its Rome, Georgia, plant. According to the manufacturer the new fiber has properties of great strength, low elongation, and dimensional stability which will make it useful for fire hose, high-pressure hose, and other industrial products. The photo at left shows a demonstration at the Rome plant in which 2½-inch hose was subjected to pressure tests. Reports stated that the new synthetic fiber provides hose with a bursting strength of 1,500 pounds per square inch, in addition to lighter weight and greater heat resistance. Further information may be obtained by writing to the manufacturer at the above address.

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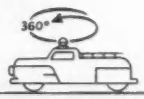

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Ultimate in a warning light! Flip the switch and instantly the parabolic mirror begins to rotate around the 100 candlepower bulb at 60 TIMES A MINUTE. Flash is so intense not only at great distances, but close by, that all traffic is immediately alerted. 9½" diameter. Heavy chrome. Stands full 11" above the roof. A beauty —and price is LOW!

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Dealer Inquiries Invited. Write to Department F

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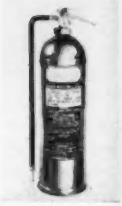

A lightweight, stainless steel pressurized water fire extinguisher has been developed by Fyr-Fyter Company, 221 Crane Street, Dayton 1, Ohio. According to the manufacturer, it can be pressurized from any compressed air source or by one of the company's dry nitrogen recharging units. A gage indicates how much pressure is available. The extinguisher is hydrostatically pressure tested to 500 pounds psi, and the new model has been listed by Underwriters' Laboratories. Write to the manufacturer for further information and prices.

Pumpers for Philadelphia

The Philadelphia Fire Department recently received these six new 750 gpm Mack pumpers which also feature a high-pressure pump developing up to 800 psi. In addition, each truck carries a 500 gallon water tank and has hose bed space for approximately 2,000 feet of 2½- and 1½-inch hose.

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For areas lacking in water supply, you can carry and store up to 300 gallons with Harodikes portable canvas water tanks. Full information available from *Harodikes Inc.*, North Dighton, Mass . . . Do you maintain records on your hose supply? Free hose record cards are yours through *Bi-Lateral Fire Hose Co.*, 20 North Wacker Drive, Chicago 6, Illinois. . . . Something new in badges — the "Hi-Glo" lifetime badge — is announced by *V. H. Blackinton & Co., Inc.*, Attleboro Falls, Mass. . . .

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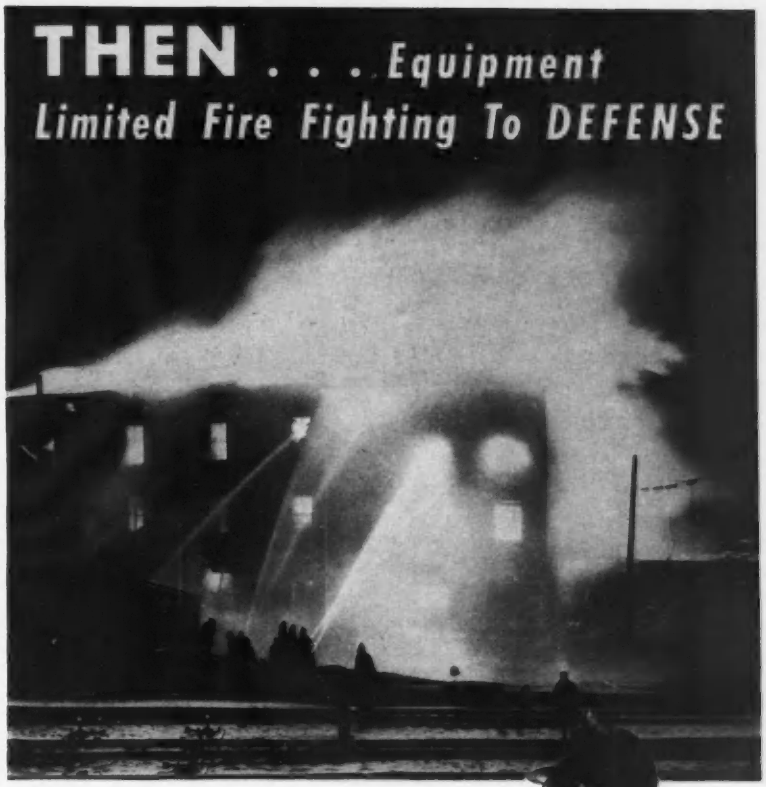
With 100 gallons of fresh or salt water, 3 gallons of Nicerol NLXX foam liquid forms 1,000 gallons of foam. Sample 5-gallon can of Nicerol with full technical and commercial details is offered by *George Reynolds & Associates*, P.O. Box 395, Thornwood, N. Y. . . . Check with *Sharpsville Steel Fabricators, Inc.*, Sharpsville, Pa., for motorized equipment. . . . You'll save your heavier, costly equipment by using back-pack pumps for grass, brush and small fires. New catalog now available on lever or sliding pump types from *D. B. Smith & Co.*, 408 Main St., Utica 2, N. Y. . . . *Trippe Mfg. Co.*, manufacturers of Trippe Hi-Ball 360 degree revolving warning light with 100 candlepower bulb, has moved to 133 North Jefferson St., Chicago 6, Illinois.

THEN . . . Equipment Limited Fire Fighting To DEFENSE



1948 . . . Michigan Firemen had their hands full with this warehouse fire, which, they said, was the worst in several years. The sprawling three-story building was occupied by several industrial concerns. Damage was estimated at $500,000. (Int. News Photo)

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Rockwood All-Purpose FOAM liquid with standard Rockwood FOAM nozzle provides the simplest, fastest means for extinguishing alcohol, solvent fires. The FOAM nozzle attaches to a hose connected to the discharge gate of a fire truck, hydrant or interior hose station.

Specify new Rockwood All-Purpose FOAM, put this versatile fire fighter to work for you.

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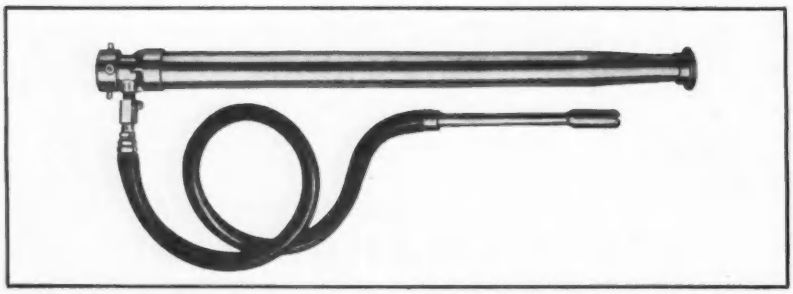
Engineers Water . . . to Cut Fire Losses



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One control—just vary easy trigger pressure for close-range, medium or long-range fog and straight streams.

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And these extra helps (single samples free)			
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.....	Merchants Self-Inspection Blank	1.00	7.50
.....	Sparky Comic Book — The History of Modern Fire Departments	5.00	45.00
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